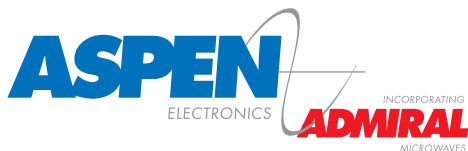


- + COMPONENTS
- + TEST EQUIPMENT
- + DESIGN & MANUFACTURE
- + SERVICE & CALIBRATION

> THE ASPEN ADVANTAGE



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Rochester, Kent ME1 3QR

Tel: + 44 (0)330 313 3220
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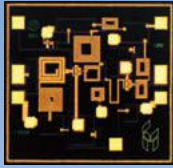


ON YOUR WAVELENGTH

> **MILLIMETRIC
SOLUTIONS
40GHz PLUS**



ASPEN OFFERS AN EXTENSIVE RANGE OF MILLIMETRIC COMPONENTS & SUB-SYSTEMS FROM 40GHz.



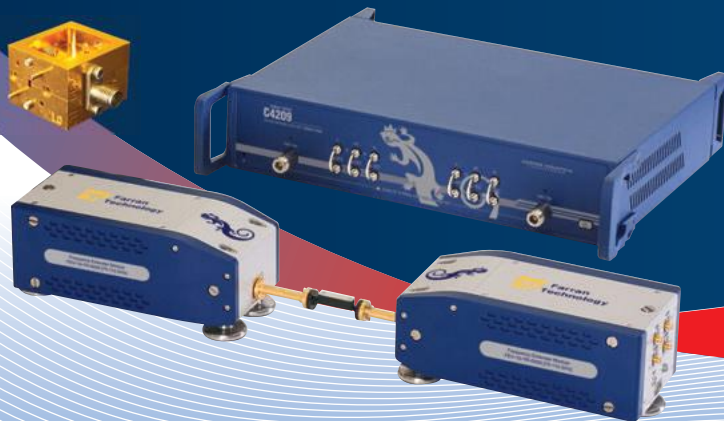
CUSTOM MMIC

- RF to Millimeter Wave InP pHEMT, GaAs pHEMT, InGaP HBT, GaN pHEMT & GaAs MESFET MMICs.
- Distributed Amplifiers, LNAs, PAs & Drivers to 50GHz.
- Phase Shifters, Attenuators & Switches to 50GHz.
- Mixers: Fundamental, Dual & I/Q to 32GHz.
- Multipliers: Active & Passive to 40GHz.



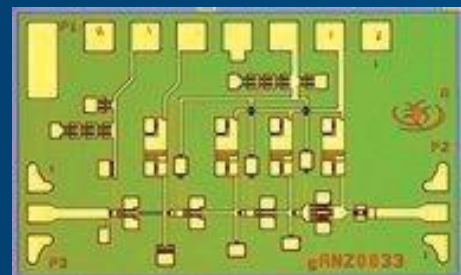
FARRAN

- Millimeter Wave Components & Systems to 500GHz.
- Frequency Extension Solutions for VNA/PNA/PNA-X, NFA, Spectrum Analyzers & Signal Generators from 40 to 325GHz.
- Noise Sources to 170GHz.
- Cobalt Fx mmWave VNA Test Solutions.
- FMCW Front Ends (77GHz).
- Passive Imaging Front Ends (94, 183 & 220GHz).
- Low Noise, Medium & High Power Amplifiers.
- Fundamental, Harmonic & Sub-Harmonic Mixers.
- Frequency Multipliers (Active & Passive).



ERZIA

- Microwave & Millimeter Wave Devices to 119GHz for Space, Defence, EW, Radar, Scientific & Telecom Applications.
- Space & MIL Qualified Products.
- RF Power & Low Noise Amplifiers.
- Integrated Microwave Assemblies (IMAs).
- EGSE, SCOE & Test Systems for Space Ground Support.



GOTMIC

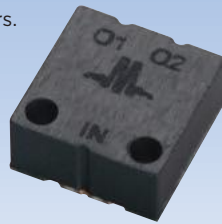
- High Frequency MMIC Chips from 50 to 120GHz.
- MMIC Receivers, Transmitters & Front-End IC Solutions to 120GHz.
- MMIC Amplifiers, Mixers & Switches.
- MMIC Frequency Multipliers & Detectors.
- Evaluation Boards Available.



RFbeam Microwave GmbH

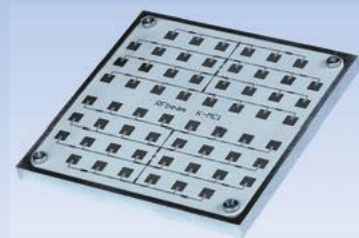
MARKI

- Passive & Active Components to 67GHz.
- MMIC & Patented Microlithic Mixers to 50GHz.
- T3 High Linearity Mixers to 40GHz.
- Legacy Double & Triple Balanced Mixers to 65GHz.
- Image Reject/SSB & IQ Special Function Mixers.
- LO Driver Amplifiers, MMICs, Baluns & Transformers to 67GHz.
- Bias Tees, & DC Blocks, SMD & Coaxial to 65GHz.
- Couplers & 3dB Quad Hybrids to 67GHz.
- Multipliers including Doublers, Triplers & Quadruplers.
- Filters including Bandpass, Lowpass & Highpass.
- Resistive, Wilkinson, 2, 3 & 4 Way Power Dividers.



RFBEAM

- Radar Sensors/Doppler Devices, Transceivers & Systems to 86GHz for Range & Distance Detection.
- Extensive range of Standard 24GHz Modules Available.
- Movement & Industrial Sensors for Speed Detection, Security & Lighting Applications.
- Doppler Transceivers & Simulators.
- Radar Signal Processors, Test & Measurement Systems.
- Antennas & Custom Designs Available.



ANTENNAS

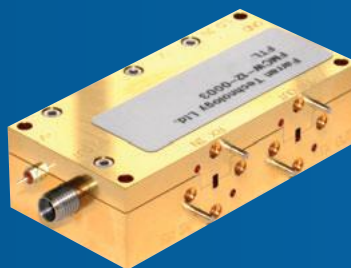
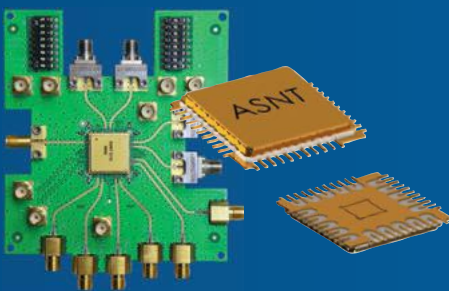
- Gain & Conical Gain Horn Antennas to 220GHz.
- Lens Horn Antennas to 170GHz.
- Cassegrain Antennas to 140GHz.
- Scalar Feed Horn Antennas to 170GHz.
- Patch Antennas at 24GHz, 77GHz & Above.

CABLES, CONNECTORS & ADAPTORS

- Cable Assemblies to 110GHz with Phase Matching Options.
- VNA Test Cables to 67GHz.
- 2.92mm, 2.4mm & 1.85mm Connectors.
- 2.92mm, 2.4mm, 1.85mm & 1.0mm Adaptors including NMD Test Port Versions.

FILTERS

- Filters Designed for any Frequency Range to 220GHz.
- Low Insertion Losses from 0.15 dB with Cut Off Rejections to 80dB.
- Mode types to 140GHz.
- High Pass to 220GHz.
- Band Pass Filters to 150GHz.



HIGH SPEED ICs

- D-type Flip Flop to 64Gbps.
- Broadband Clock Dividers DC to 56GHz.
- Limiting Amplifiers to 45Gbps.
- Digital Multiplexers/Demultiplexers to 64Gbps.

SIGNAL SOURCES & OSCILLATORS

- Mechanically or Electrically Tuned Gunn Oscillators to 110GHz.
- Phase Locked Oscillators to 140GHz.
- Stable Millimeter Wave Sources to 100GHz.
- Custom Designs Available.

WAVEGUIDE

- Millimetric Waveguide from WR28 to WR3 (330GHz).
- Straight & Twist Sections, E & H Plane Bends.
- Active & Passive Waveguide Components to 220GHz including Attenuators, Couplers, Loads, Multipliers, Dividers/Hybrids & Rotary Joints.